selecting a workpiece [substrate] with a hard mask deposited over a layer to be etched, which hard mask is comprised of a reactive metal [deposited over a layer to be etched]; and

processing the [layer] workpiece in a reactor using an etch step and using the hard mask to minimize critical dimension growth of features on the layer.

2. (Amended) The method of claim 1 wherein:

said selecting step includes selecting a [substrate] workpiece having a hard mask which hard mask comprises of one of titanium, aluminum, and tantalum.

3. The method of claim 1 including the step of:

exposing the hard mask to a stream of oxidizing gas in the reactor prior to or during said etch step.

4. The method of claim 1 including the step of:

exposing the hard mask to an oxidizing stream comprising of one of oxygen, nitrogen, fluorine, boron, and carbon gas, and any combination of oxygen, nitrogen, fluorine, boron, and carbon gas, in the reactor prior to or during said etch step.

5. (Amended) The method of claim 1 wherein :

said selecting step includes selecting a [substrate] workpiece with a lithographic layer covering the hard mask [into the reactor].

6. The method of claim 1 wherein:

said selecting step includes selecting a substrate having a hard mask which is readily oxidizable.

7. The method of claim 1 wherein:

said selecting step includes selecting a substrate with a hard mark, which hard mask is comprised of a metal with a low sputtering yield.

8. The method of claim 1 including the step of:

exposing the hard mask to a stream of oxidizing gas in the reactor prior to or during said etch step in order to oxidize the surface of the hard mask and thereby slow down an etch rate of the hard mask.

9. The method of claim 1 wherein:

said selecting step includes selecting a hard mask (1) on which has been or (2) on which can be developed at least one of an oxide, nitride, fluoride, boride and carbide.

10. The method of claim 1 including the step of:

providing energy to the reactor in order to increase a rate of oxidation of the hard mask in order to slow down the rate of erosion of the hard mask.

11. (Amended) The method of claim 10 wherein :

said step of providing energy causes the substrate in the reactor to be heated to a temperature in the range of from about 80°C to about 300°C.

12. The method of claim 1 including the step of:

oxidizing the hard mask either prior to or during the processing step.

13. (Amended) A method for [containment of] minimizing critical dimension growth of [a] the width of features located on a workpiece [substrate] including the steps of:

selecting a workpiece [substrate] with a hard mask deposited over a layer to be etched, wherein said hard mask has a low sputter yield and a low reactivity to the etch chemistry of an etch process; and

processing the [layer] workpiece in a reactor using the said etch chemistry in order to etch the layer and using the hard mask to minimize critical dimension growth of the width features on the layer.

14. (Amended) The method of claim 13 wherein:

said selecting step includes selecting a [substrate] workpiece wherein said hard mask is comprised of a reactive metal.

15. (Amended) The method of claim 13 wherein:

said selecting step includes selecting a [substrate] workpiece having a hard mask which [is comprising] comprises at least one of titanium, aluminum, tantalum, tungsten, cobalt, and molybdenum.

16. The method of claim 13 including the step of:

exposing the hard mask to a stream of oxidizing gas in the reactor prior to or during said processing step.

17. The method of claim 13 including the step of:

exposing the hard mask to a stream consisting of one of oxygen, nitrogen, fluorine, boron, and carbon and any combination of oxygen, nitrogen, fluorine, boron and carbon.

18. (Amended) The method of claim 13 wherein :

said selecting step includes selecting a [substrate] workpiece with a lithographic layer covering the hard mask.

19. The method of claim 13 wherein:

said selecting step includes selecting a substrate having a hard mask which is readily oxidizable.

20. The method of claim 13 including the step of:

exposing the hard mask to a stream of oxidizing gas in the reactor prior to or during said etch step in order to oxidize the surface of the hard mask, and thereby slow down an etch rate of the hard mask.

21. The method of claim 13 wherein:

said selecting step includes placing a hard mask (1) which has been or (2) which can be oxidized.

22. The method of claim 13 including the step of:

providing energy to the reactor in order to increase a rate of oxidation of the hard mask in order to slow down the rate of erosion of the hard mask.

23. (Amended) The method of claim 22 wherein :

said step of providing energy causes [the substrate] a workpiece in the r actor to be heated to a temperature in the range of from about 80°C to about 300°C.

24. The method of claim 13 including the step of:

oxidizing the hard mask either prior to or during the processing step.

25. (Amended) A method for [containment of] minimizing critical dimension growth of [a] the width of features located on a [wafer] workpiece including the steps of:

selecting a workpiece [substrate] with a hard mask deposited over a layer to be etched, which hard mask is comprised of [which comprises] at least one of titanium, titanium compounds, aluminum, aluminum compounds, tantalum, tantalum compounds, tungsten, tungsten compounds, cobalt, cobalt compounds, molybdenum, and molybdenum compounds[, over a layer to be etched into a reactor]; and

processing the workpiece [layer] in the reactor using an etch step and using the hard mask to minimize critical dimension growth of the features on the layer.

26. (Amended) A method for [containment of] minimizing critical dimension growth of [a] the width of features located on a [substrate] workpiece including the steps of:

depositing on a substrate workpiece and over a layer to be etched a hard mask comprising at least one of a reactive metal, an oxide of a reactive metal, a nitride of a reactive metal, a fluoride of a reactive metal, a boride of a reactive metal, and a carbide of a reactive metal; and

processing the [layer] workpiece in the reactor using an etch step and using the hard mask to minimize critical dimension growth of the width of features on the layer.

27. The method of claim 26 wherein:

said hard mask is selected from a material having a low sputter yield.

28. (Amended) A method for [containment of] minimizing critical dimension growth of [a] the width of features located on a [substrate] workpiece including the steps of:

depositing on a [substrate] workpiece and over a layer to be etched a hard mask, wherein said hard mask has at least one of a low sputter yield and a low reactivity to the etch chemistry of an etch process; and

processing the [layer] workpiece in the reactor using the said etch chemistry in order to etch the layer and using the hard mask to minimize critical dimension growth of the features on the layer.

29. (Amended) A method for [containment of] minimizing critical dimension growth of [a] the width of features located on a [substrate] workpiece including the steps of:

depositing on a [substrate] workpiece and over a layer to be etched, a hard mask which comprises at least one of titanium, titanium compounds, aluminum, aluminum compounds, tantalum, tantalum compounds, tungsten, tungsten compounds, cobalt, cobalt compounds, molybdenum, and molybdenum compounds; and

processing the workpiece [layer] in the reactor using an etch step and using the hard mask to minimize critical dimension growth of the features on the layer.

30. (Amended) A method of [containment of] minimizing critical dimension growth of [a] the width of features located on a [wafer] workpiece including the steps of:

selecting a workpiece [substrate] with a hard mask consisting of one of a reactive metal, an oxide of a reactive metal, a nitride of a reactive metal, a fluoride of a reactive metal, a boride of a reactive metal, and a carbide of a reactive metal, and a compound comprising any combination of an oxide, a fluoride, a nitride, a carbide, and a boride of a reactive metal, deposited over a layer to be etched; and

processing the workpiece [layer] in the reactor using an etch step and using the hard mask to minimize critical dimension growth of the features on the layer.

31. The method of claim 30 wherein:

said selecting step includes selecting a substrate having a hard mask which consists of one of titanium, titanium compounds, aluminum, aluminum compounds, tantalum, tantalum compounds, tungsten, tungsten compounds, cobalt, cobalt compounds, molybdenum, and molybdenum compounds.

32. (Amended) The method of claim 30 including the step of:

said selecting step includes selecting a hard mask consisting of a reactive metal; and

exposing the hard mask to a stream comprising of at least one of oxygen, nitrogen, fluorine, boron, carbon, and ions or radicals of oxygen, ions or radicals of nitrogen, ions or

radicals of fluorine, ions or radicals of boron, and ions or radicals of carbon in the reactor prior to or during said etch step.

33. The method of claim 30 wherein:

said selecting step includes selecting a substrate with a hard mask, which hard mask is comprised of a metal with a low sputtering yield.

34. The method of claim 30 including the step of:

providing energy to the reactor in order to increase a rate of oxidation of the hard mask in order to slow down the rate of erosion of the hard mask.

35. The method of claim 13 wherein:

said selecting step includes selecting a substrate wherein said hard mask comprises at least one of a reactive metal, an oxide of a reactive metal, a nitride of a reactive metal, a fluoride of a reactive metal, a carbide of a reactive metal, a boride of a reactive metal or some combination of a reactive metal.

36. The method of claim 1 including the step of:

using the etched substrate to fabricate one of a semiconductor chip, a magnetic head, and a flat panel display.

37. The method of claim 1 wherein:

said selecting step includes a hard mask comprised of at least one of a reactive metal and a compound of a reactive metal; and

said selecting step further includes selecting a hard mask comprised of at least one of titanium, aluminum, tantalum, tungsten, cobalt, molybdenum, copper, nickel, iron, and compounds of at least one of titanium, aluminum, tantalum, tungsten, cobalt, molybdenum, copper, nickel, and iron.

38. The method of claim 1 wherein:

said selecting step includes a hard mask comprised of at least one of a reactive metal and a compound of a reactive metal, and said compound comprises at least one of an oxide, a nitride, a fluoride, a boride, and a carbide of a reactive metal, and any combination of an oxide, a nitride, a fluoride, a boride, and a carbide of a reactive metal.